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"EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	ELASS	SUBCLASS	FILIN IF APPR	IG DATE IOPRIATE
KS	4,945,313	07/31/90	Synchronous Demodulator Having Automatically Tuned Band-Pass Filter	329	349	06/05	5/89
	5,117,069	05/26/92	Circuit Board Fabrication	174	261	09/28	3/90
	5,133,120	07/28/92	Method of Filling Conductive Material into Through Holes of Printed Wiring Boards	29	852	03/15	5/91
	5,277,854	01/11/94	Methods and Apparatus for Making Grids from Fibers	264	86	06/06	5/91
	5,332,439	07/26/94	Screen Printing Apparatus for Filling Though- Holes in Circuit Board With Paste	118	213	08/18	3/92
	5,707,575	01/13/98	Method for Filling Vias in Ceramic Substrates with Composite Metallic Paste	264	104	07/28	3/94
KS	5,744,171	04/28/98	System for Fabricating Conductive Epoxy Grid Array Semiconductor Packages	425	110	05/12	2/97
l 'L	DS <sub>5,753,976</sub>	05/19/98	Multi-Layer Circuit Having a Via Matrix Interlayer Connection	257.	77.4	06/14	1/96
Sup -	6,015,520	01/18/00	Method for Filling Holes in Printed Wiring Boards	264	104	05/15	5/97_
ISS receiv	6,149,857	11/21/00	Method of Making Films and Coatings Having Anisotropic Conductive Pathways Therein	264	429	12722	2/98
4-8-02	6,184,133	02/06/01	Method of Forming an Assembly Board With Insulator Filled Through Holes	438	667	02/18	8/00
	<b>6</b> ,261,501	07/17/01	Resin Sealing Method for a Semiconductor  Device	264	272.15	01/22	2/99
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Jesse Pedigo, et al.

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KS	3,601,523	08/24/71	Through Hole Connectors	174	68.5	06/19/70
1	4,106,187	08/15/78	Curved Rigid Printed Circuit Boards	29	625	01/16/76
	4,283,243	08/11/81	Use of Photosensitive Stratum to Create Through-Hole Connections in Circuit Boards	156	237	03/20/80
	4,360,570	11/23/82	Use of Photosensitive Stratum to Create Through-Hole Connections in Circuit Boards	428	596	06/15/81
	4,622,239	11/11/86	Method and Apparatus for Dispensing Viscous Materials	427	96	02/18/86
	4,700,474	10/20/87	Apparatus and Method for Temporarily Scaling Holes in Printed Circuit Boards	29	846	11/26/86
	4,777,721	10/18/88	Apparatus and Method for Temporarily Sealing Holes in Printed Circuit Boards Utilizing a Thermodeformable Material	29	846	10/15/87
	4,783,247	11/8/88	Method and Manufacture for Electrically Insulating Base Material Used in Plated-Through Printed Circuit Panels	204	181.1	05/15/86
	4,884,337	12/05/89	Method for Temporarily Scaling Holes in Printed Circuit Boards Utilizing a Thermodeformable Material	29	846	10/15/87
	4,964,948	10/23/90	Printed Circuit Board Through Hole Technique	156	659	11/13/89
	4,995,941	02/26/91	Method of Manufacture Interconnect Device	156	630	05/15/89
	5,053,921	10/01/91	Multilayer Interconnect Device and Method of Manufacture Thereof	361	386	10/23/90
	5,058,265	10/22/91	Method for Packaging a Board of Electronic Components	29	852	09/10/90
1	5,145,691	09/08/92	Apparatus for Packing Filler into Through-Holes or the Like in a Printed Circuit Board	425	110	03/22/91
	5,220,723	06/22/93	Process for Preparing Multi-Layer Printed Wiring Board	29	830	11/04/91
	5,274,916	01/04/94	Method of Manufacturing Ceramic Multilayer Electronic Component	29	848	12/17/92
	5,451,721	09/19/95	Multilayer Printed Circuit Board and Method for Fabricating Same	174	261	09/24/91
	5,456,004	10/10/95	Anisotropic Interconnect Methodology for Cost Effective Manufacture of High Density Printed Circuit Boards	29	852	01/04/94
KS	5,471,091	11/28/95	Techniques for Via Formation and Filling	257	752	08-26-91

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KS	,	5,824,155	10/20/98	Method and Apparatus for Dispensing Viscous Material	118	410	11/08/95
		5,822,856	10/20/98	Manufacturing Circuit Boards Assemblies Having Filled Vias	29	832	06/28/96
		5,766,670,	06/16/98	Via Fill Compositions for Direct Attach of Devices and Methods for Applying Same	427	8	11/17/93
		5,761,803	06/09/98	Method of Forming Plugs in Vias of A Circuit Board by Utilizing a Porous Membrane	29	852	06/26/96
		5,753,976	05/19/98	Multi-Layer Circuit Having a Via Matrix Interlayer Connection	257	774	06/14/96
		5,744,285	04/28/98	Composition and Process for Filling Vias	430	318	07/18/96
		5,699,613	12/23/97	Fine Dimension Stacked Vias for a Multiple Layer Circuit Board Structure	29	852	09/25/95
		5,662,987	09/02/97	Multilayer Printed Wiring Board and Method of Making Same	428	209	02/01/96
		5,637,834	06/10/97	Multilayer Circuit Substrate and Method for Forming Same	174	264	02/05/6
		5,610,103	03/11/97	Ultrasonic Wave Assisted Contact Hole Filling	437	EC	12/12/95/07
		5,591,353	01/07/97	Reduction of Surface Copper Thickness on Surface  Mount Printed Wire Boards with Copper Plated  Through Holes by the Chemical Planarization Method	216	18 MAY	08/18/94
Ta Take	EN ARK 3	5,578,151	11/26/96	Manufacture of A Multi-Layer Interconnect Structure	156	64 <b>R</b> A	03/01/95
	2002	5,540,779	07/30/96	Apparatus for Manufacture of Multi-Layer Ceramic Interconnect Structures	118	692	03/01/95
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15	3,601,523	08/24/71	Through Hole Connectors	174	68.5	06/19/70
	4,106,187	08/15/78	Curved Rigid Printed Circuit Boards	29	625	01/16/76
	4,283,243	08/11/81	Use of Photosensitive Stratum to Create Through-Hole Connections in Circuit Boards	156	237	03/20/80
	4,360,570	11/23/82	Use of Photosensitive Stratum to Create Through-Hole Connections in Circuit Boards	428	596	06/15/81
	4,622,239	11/11/86	Method and Apparatus for Dispensing Viscous Materials	427	96	02/18/86
	4,700,474	10/20/87	Apparatus and Method for Temporarily Sealing Holes in Printed Circuit Boards	29	846	11/26/86
	4,777,721	10/18/88	Apparatus and Method for Temporarily Sealing Holes in Printed Circuit Boards Utilizing a Thermodeformable Material	29	846	10/15/87
	4,783,247	11/8/88	Method and Manufacture for Electrically Insulating Base Material Used in Plated-Through Printed Circuit Panels	204	181.1	05/15/86
	4,884,337	12/05/89	Method for Temporarily Sealing Holes in Printed Circuit Boards Utilizing a Thermodeformable Material	29	846	10/15/87
	4,954,313	09/04/90	Method and Apparatus for Filling High Density Vias	419	9	02/03/89
	4,964,948	10/23/90	Printed Circuit Board Through Hole Technique	156	659	11/13/89
	4,995,941	02/26/91	Method of Manufacture Interconnect Device	156	630	05/15/89
	5,053,921	10/01/91	Multilayer Interconnect Device and Method of Manufacture Thereof	361	386	10/23/90
	5,058,265	10/22/91	Method for Packaging a Board of Electronic Components	29	852	09/10/90
	5,117,069	05/26/92	Circuit Board Fabrication	174	261	09/28/90
	5,133,120	07/28/92	Method of Filling Conductive Material into Through Holes of Printed Wiring Board	29	852	03/15/91
	5,145,691	09/08/92	Apparatus for Packing Filler into Through-Holes or the Like in a Printed Circuit Board	425	110	03/22/91
	5,220,723	06/22/93	Process for Preparing Multi-Layer Printed Wiring Board	29	830	11/04/91
<u>k</u> 5	5,274,916	01/04/94	Method of Manufacturing Ceramic Multilayer Electronic Component	29	848	12/17/92

¥5	5,277,854	01/11/94	Methods and Apparatus for Making Grids from Fibers	264	86	06/06/91
	5,332,439	07/26/94	Screen Printing Apparatus for Filling Through-Holes in Circuit Board with Paste	118	213	08/18/92
	5,451,721	09/19/95	Multilayer Printed Circuit Board and Method for Fabricating Same	174	261	09/24/91
	5,456,004	10/10/95	Anisotropic Interconnect Methodology for Cost Effective Manufacture of High Density Printed Circuit Boards	29	852	01/04/94
	5,471,091	11/28/95	Techniques for Via Formation and Filling	257	752	08/26/91
	5,532,516	07/02/96	Techniques for Via Formation and Filling	257	752	03/28/95
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	5,578,151	11/26/96	Manufacture of A Multi-Layer Interconnect Structure	156	64	03/01/95
	5,591,353	01/07/97	Reduction of Surface Copper Thickness on Surface Mount Printed Wire Boards with Copper Plated Through Holes by the Chemical Planarization Method	216	18	08/18/94
	5,610,103	03/11/97	Ultrasonic Wave Assisted Contact Hole Filling	437	225	12/12/95
	5,637,834	06/10/97	Multilayer Circuit Substrate and Method for Forming Same	174	264	02/03/95
	5,662,987	09/02/97	Multilayer Printed Wiring Board and Method of Making Same	428	209	02/01/96
	5,699,613	12/23/97	Fine Dimension Stacked Vias for a Multiple Layer Circuit Board Structure	29	852	09/25/95
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	5,744,171	04/28/98	System for Fabricating Conductive Epoxy Grid Array Semiconductor Packages	425	110	05/12/97
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	5,753,976	05/19/98	Multi-Layer Circuit Having a Via Matrix Interlayer Connection	257	774	06/14/96
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++	5,766,670,	06/16/98	Via Fill Compositions for Direct Attach of Devices and Methods for Applying Same	427	8	11/17/93
	5,822,856	10/20/98	Manufacturing Circuit Boards Assemblies Having Filled Vias	29	832	06/28/96
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	5,906,042	05/25/99	Method and Structure to Interconnect Traces of T Conductive Layers in a Printed Circuit Board	wo 29	852	10/04/95				
	5,925,414	07/20/99	Nozzle and Method for Extruding Conductive Pa into High Aspect Ratio Openings	ste 427	282	07/20/99				
	5,994,779	11/30/99	Semiconductor Fabrication Employing a Spacer Metallization Technique	257	773	05/02/97				
	6,000,129	12/14/99	Process for Manufacturing a Circuit with Filled I	loles 29	852	03/12/98				
	6,009,620	01/04/00	Method of Making a Printed Circuit Board Havin Filled Holes	g 29	852	07/15/98				
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	6,090,474	07/18/00	Flowable Compositions and Use in Filling Vias a Plated Through-Holes	nd 428	209	07/18/00				
	6,106,891	08/22/00	Via Fill Compositions for Direct Attach of Device Method for Applying Same	es and 427	97	12/18/98				
	6,138,350	10/31/00	Process for Manufacturing a Circuit Board with I Holes	illed 29	852	02/25/98				
	6,153,508	11/28/00	Multi-Layer Circuit Having a Via Matrix Interlay Connection and Method for Fabricating the Same	438	622	02/19/98				
	6,276,055	08/21/01	Method and Apparatus for Forming Plugs in Vias Circuit Board Layer	of a 29	852	09/24/98				
	6,281,448	08/28/01	Printed Circuit Board and Electronic Components	174	260	08/10/99				
15	6,282,782	09/04/01	Forming Plugs in Vias of Circuit Board Layers ar Subassemblies	29	852	09/02/99				
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